

Patient as a partner in virtual teams

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Manager Innovasjon og implementering



Nasjonalt senter for
samhandling og telemedisin

NST

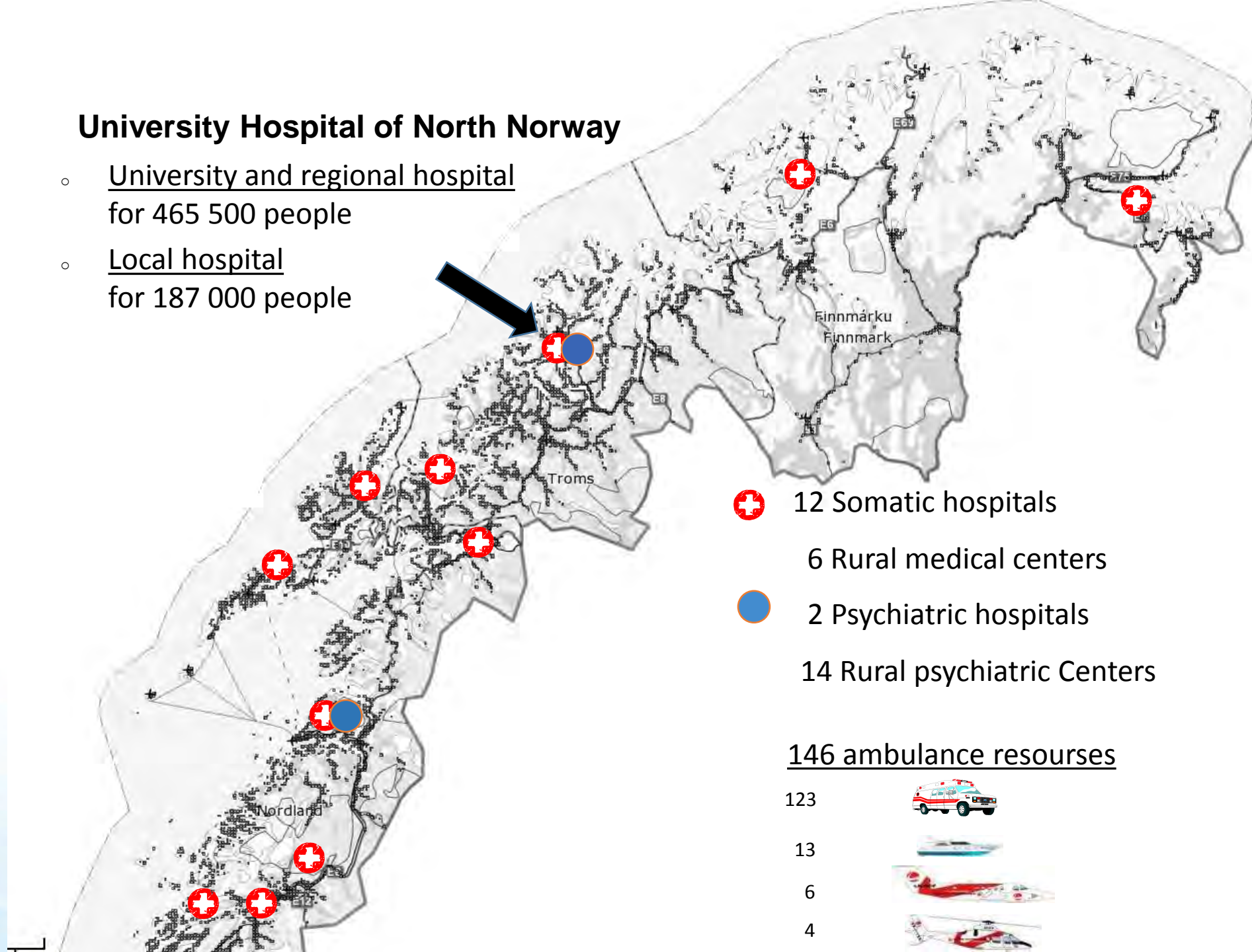
Agenda

- What have we done?
- What do they need?
- What is the solution?
- TTL (if time)



University Hospital of North Norway

- University and regional hospital
for 465 500 people
- Local hospital
for 187 000 people



Acute telemedicine

- Virtuelt team
 - Transfer of real time video and vital signs
- Prehospital thrombolysis
 - Transfer og ECG from ambulance
- Stroke – time is brain!
 - Virtual CT centres
- Psykiatry



Controls and follow-up

- Routine checkups
 - Stoma, orthopedics, eye
- Polyclinical consultations
 - Dermatology
 - Child psykiatry
 - Dialysis



Collaboration

- Electronic messaging
 - Lab request and report
 - Referrals & discharge letters
 - E-Prescriptions
- Multimedia

A screenshot of a medical software interface. The window title is "KRAV, KAR 12/12-12011 [DD] Med: 9797763 PL- DD Adr: SYKEVEJEN 65 - 8460". The interface is in Norwegian. It has a menu bar with "Rediger", "Jurnal", "Mappe", and "Hjelp". The main area is titled "HENVISNING TIL UNDERSØKELSE/BEHANDLING - SIDE 1" and has tabs for "Side 1" and "Side 2". There are several input fields and buttons. On the right, there is a sidebar with "Skjema" and "Informasjon" tabs, and a "Gjeldende" section. A red arrow points to the "Send" button at the bottom right of the main area.

Hospital at home

- Mobil radiology
- Home dialysis
- COPD
- CHF
- AAL



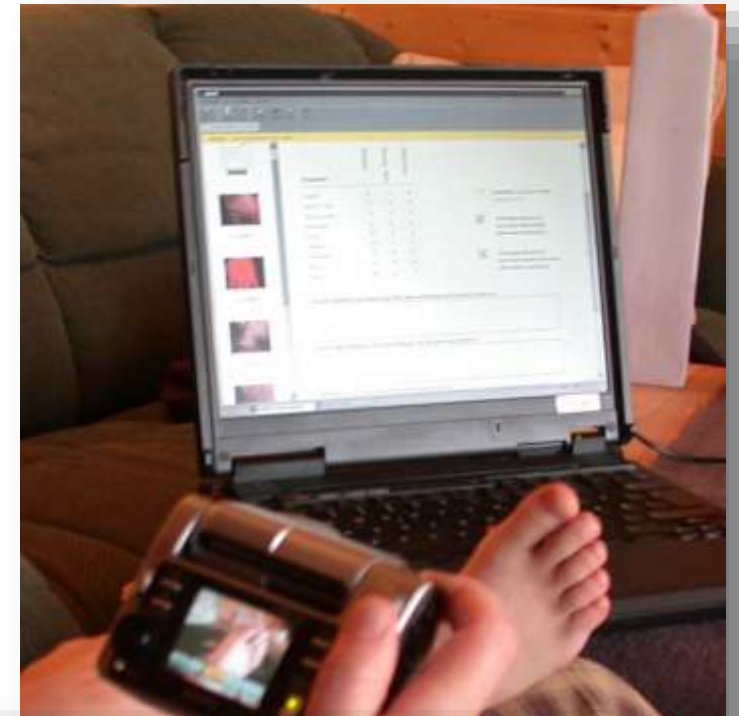
Virtual teams

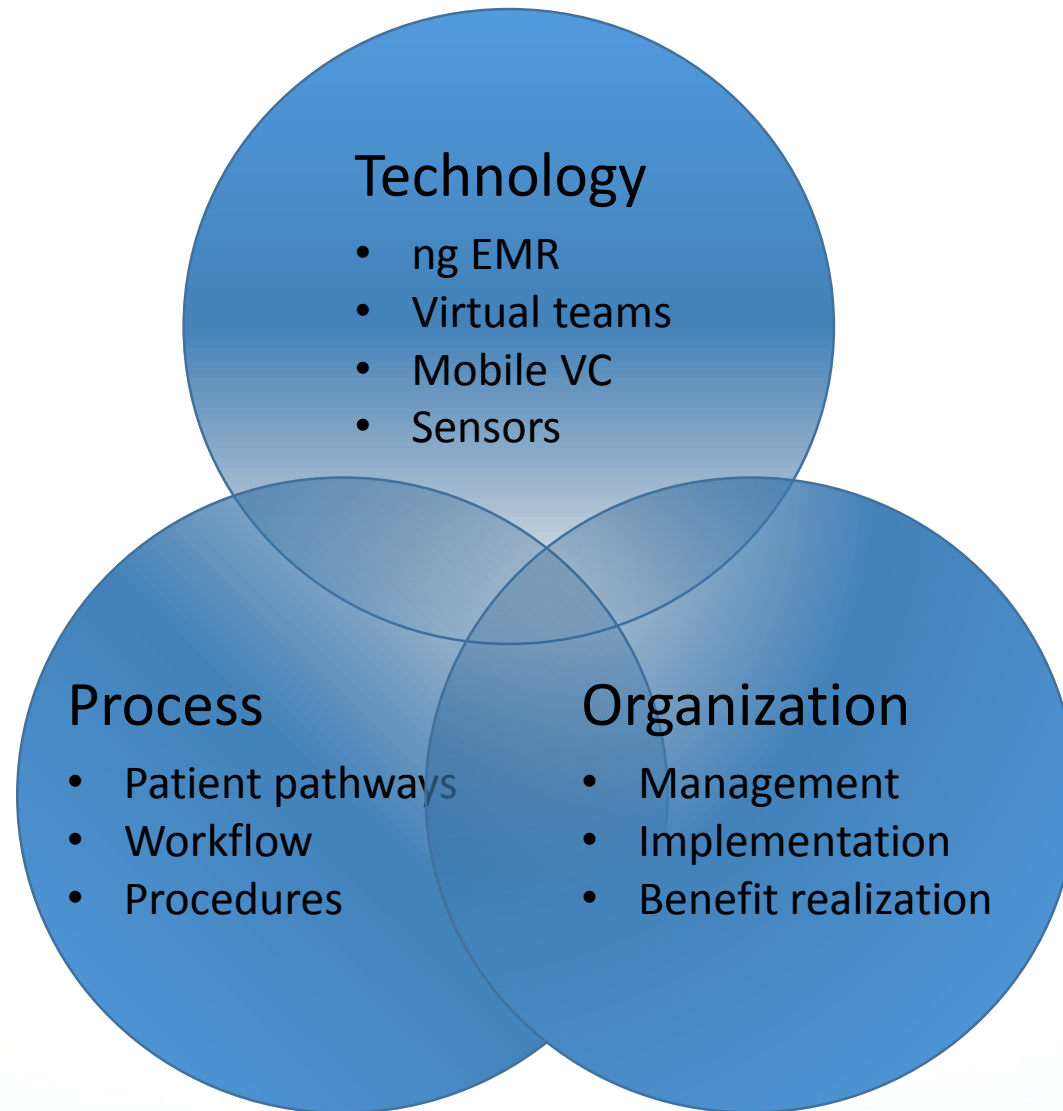
- Professional network
 - Geriatrics
 - Cancer
 - eLearning
- Referral and discharge meetings



Web based collaboration

- Wounds, ulcers
- Cancer
- Psychiatry



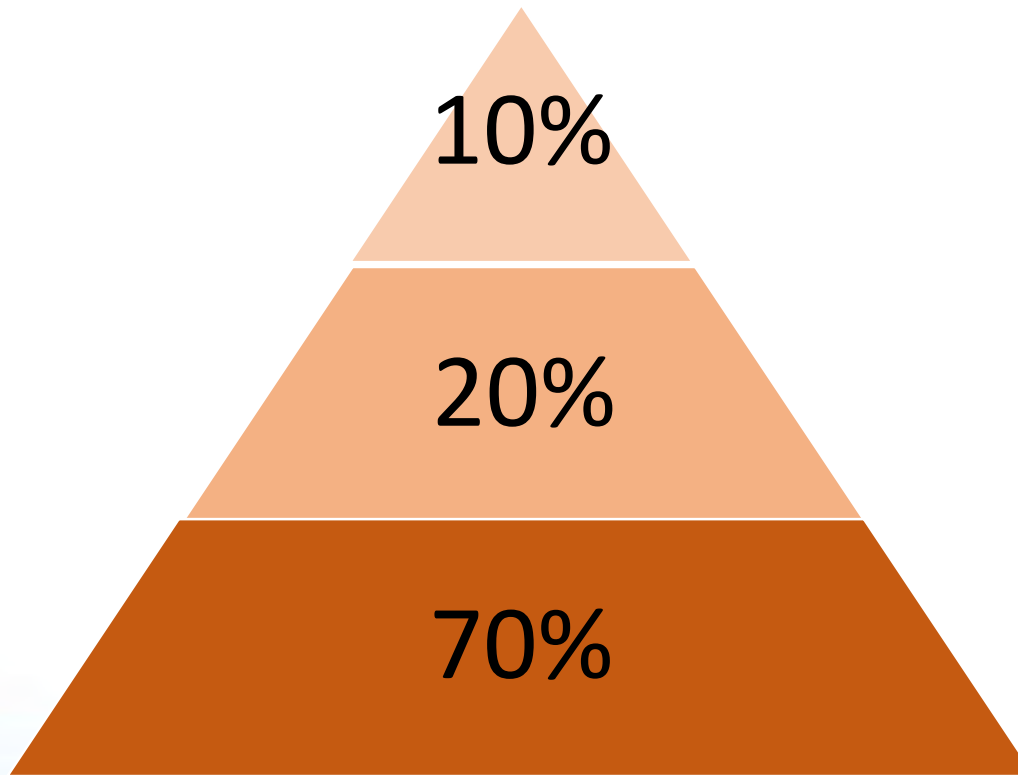


$$\text{Success} = (\text{Need} \times \text{Solution} \times \text{Team} \times \text{Driving force} \times \text{Ownership})^n$$

Different patients – different needs.

- People outside the health service needs services that contribute to keeping them healthy as long as possible.
- People with predictable and short term conditions needs a plan for diagnosis and treatment.
- Patients with complex and long term conditions.

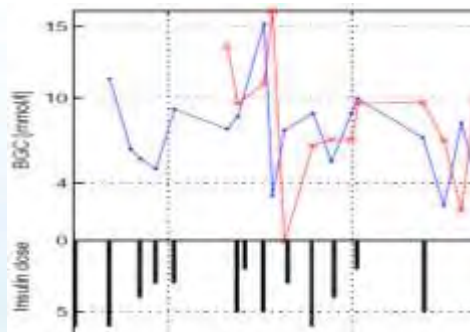
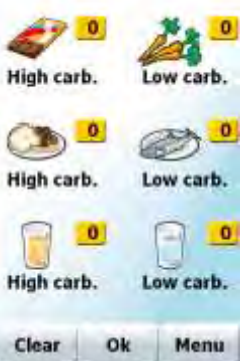
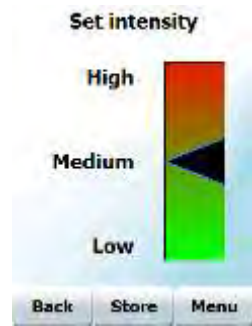
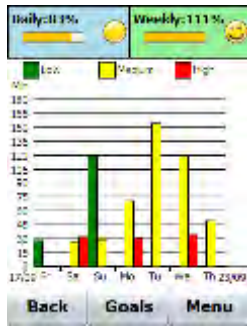
Use of hospital resources and cost



People outside the health service needs services that contribute to keeping them healthy as long as possible.



Mobile technology for self help



People with
predictable and short
term conditions needs
a plan for diagnosis
and treatment



Telemedicine must be integrated in the workflow

HERMANSEN, Eskild
17.06.2019 14:51 - 73 år - Mann

Vurdere henvisning

Avdeling: Kirurgisk avdeling
Mottatt: 03.05 (i går)
Vurdert: 04.05 (i dag)
Vurdert av: Bjørn Næss
Henvisningstype: Hematuri utredning
Maksimum/frist: 4 uker

Henvisning

Tidligere sykdommer: Høyt BT, hjerteflimmer, diabetes, insulinavhengig
Medikamenter: Selo-Zok 100 mg x 1, Marevan etter liste, Insulin etter liste

Aktuelt:
Siste 2 år økende vannlatingsplager. Må opp 3-4 ganger hver natt hyppig vannlating på dagtid, hver andre time. Små miksjonsvolum. Redusert strålekraft. Føler ikke han tømmer blæren helt etter fullført miksjon. Noe "Urgency", men ingen urinlekkasje. Ved 2 anledninger har han sett blod i urinen. PSA verdien er målt lett forhøyet til 6,9, kontrollert ved 2 målinger.

Henvises til videre undersøkelser
Med hilsen
NN

Start utredning hematuri
Planlegg undersøkelser utenfor mål

Retningslinje
Retningslinje for utredning og behandling

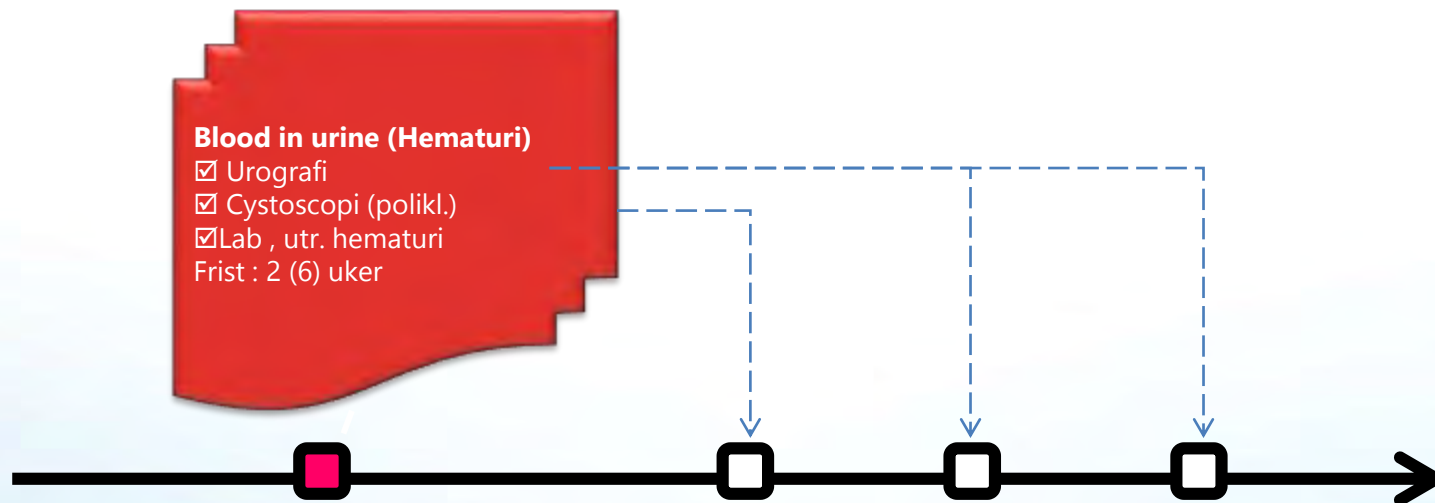
Utredning - hematuri

1. Rtg thorax gjøres på liberal indikasjon ved mistanke om lungekreft. CT thorax og øvre abdomen skal utføres ved klinisk mistanke om lungekreft, selv om rtg thorax er normalt.

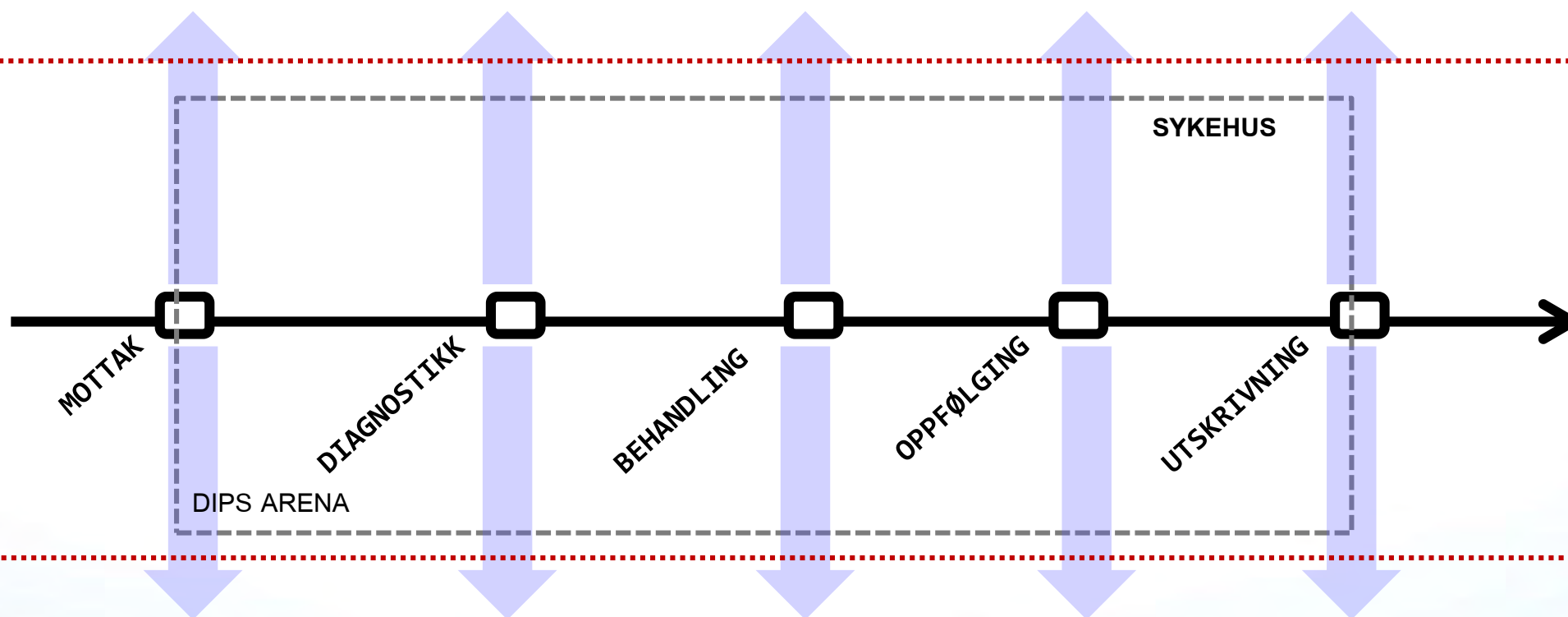
2. Forstørrede lymfeknuter (kort diameter > 1 cm) i mediastinum på CT må utredes videre før pasienten henvises til kirurgi.

3. Pasienter med anamnesteiske opplysninger eller kliniske funn tydende på metastaser, må utredes for å avkrefte eller bekrefte metastaser.

4. Radiologisk eller nukleærmedisinsk mistanke om lokalisert sykdom eller fjernetastaser, må hvis mulig bekreftes cytologisk/biopsisk før behandling med kurativ siktemål utføres.



PRIMÆRHELSETJENESTEN



PASIENTER



Patients with complex and long term conditions

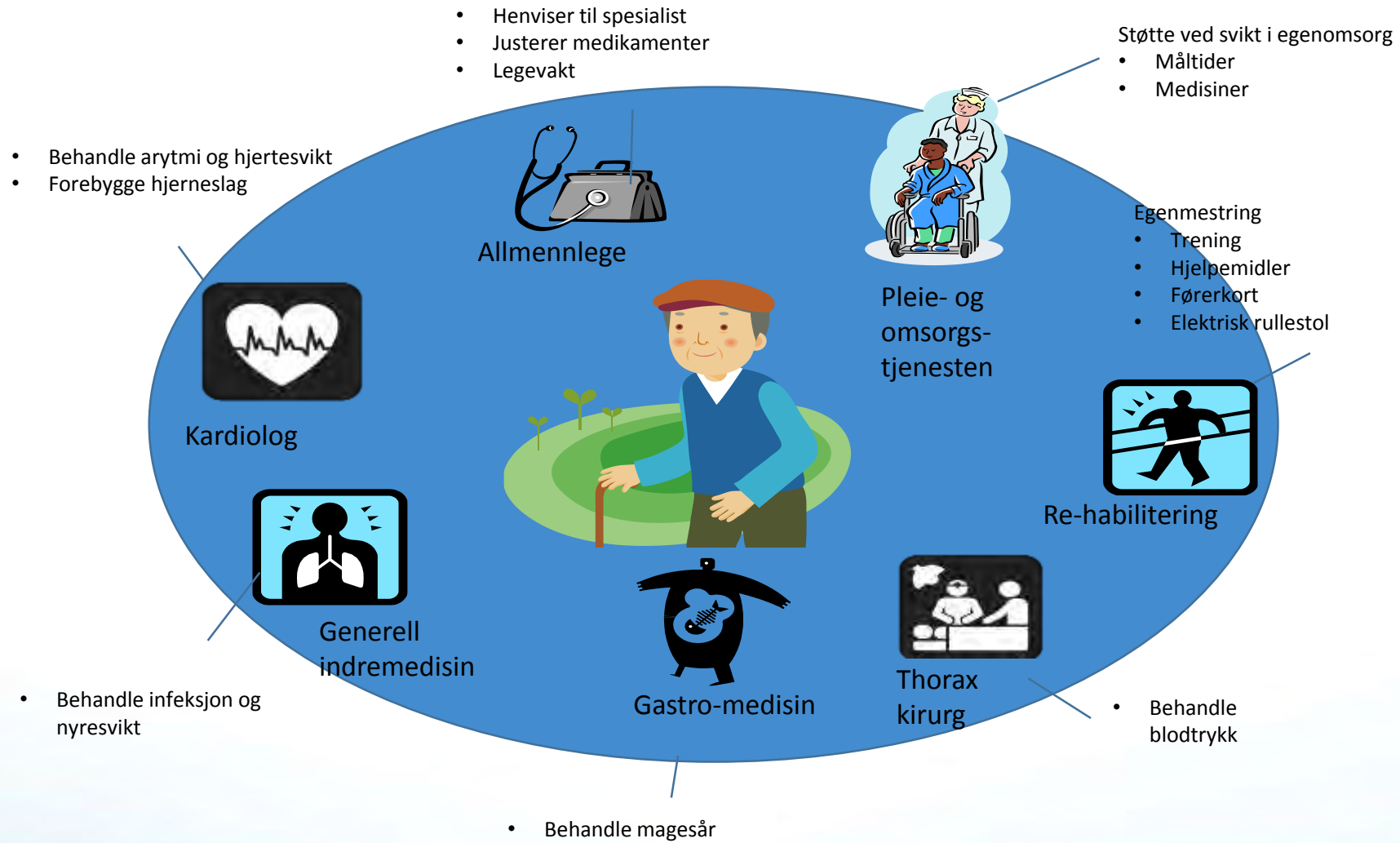
- The 10% of patients who have complex and long term requirements using 2/3 of the total resources.
- We need solutions to identify these patients and meet their needs in a proactive, planned and efficient manner.
 - patient-centered,
 - coordinated, proactive and planned,
 - offers one point of contact for patients with complex and lengthy requirements,
 - supports multi-professional team
 - a learning healthcare system

Alfred, 70 years old

- Congestive heart disease
- Atrial fibrillation
- Aortal aneurysm
- Duodenal ulcers
- Renal failure
- Generalized atherosclerosis



130 hospital days in 2012, 4 acute hospitalizations and 1 rehabilitation stay

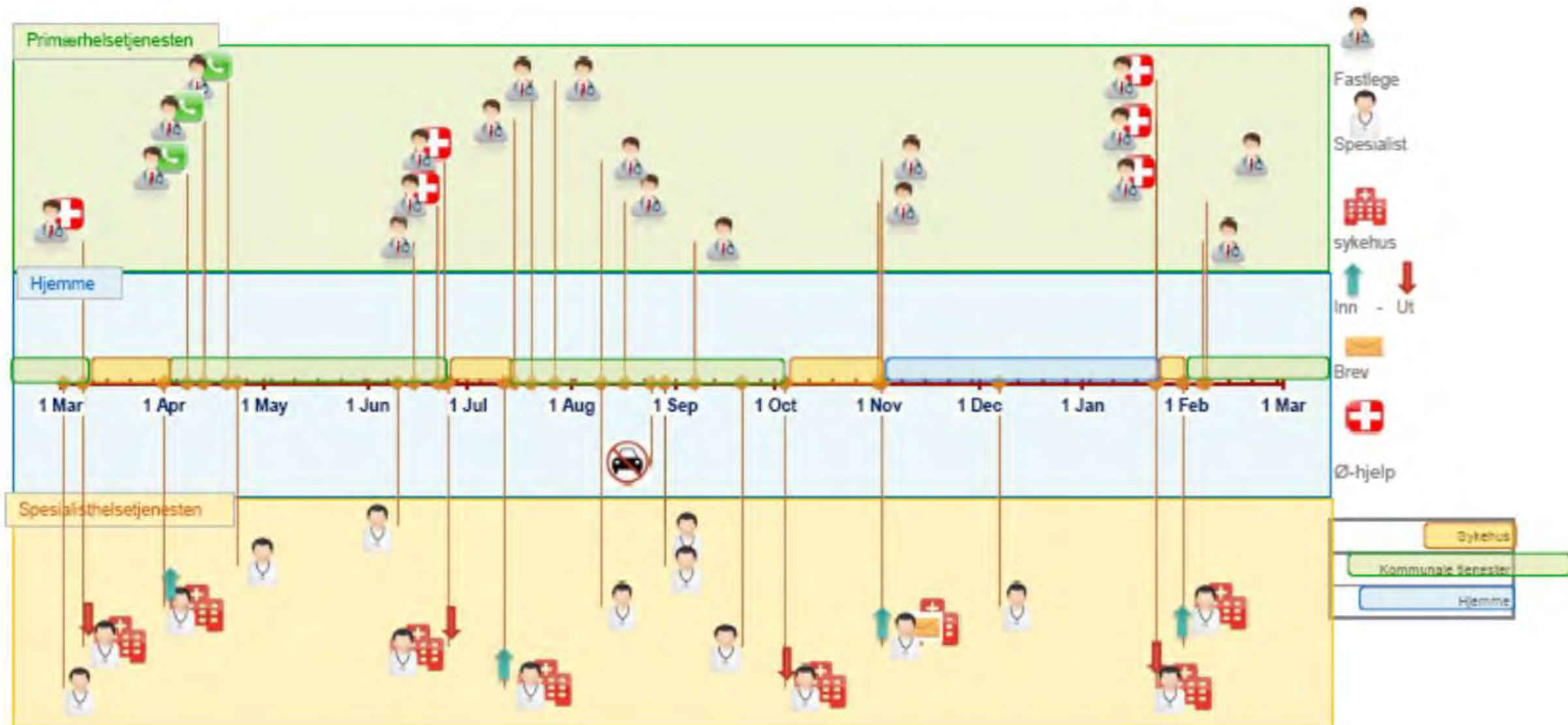




- Proactive
- Prevention
- Personal
- Social support
- Biological, behavioural and psychological data in natural environment



- Reactive
- Reductionistic
- Periodically, 15min us
- population based
- Biological Data in an artificial setting





Chronic Care Model - CCM

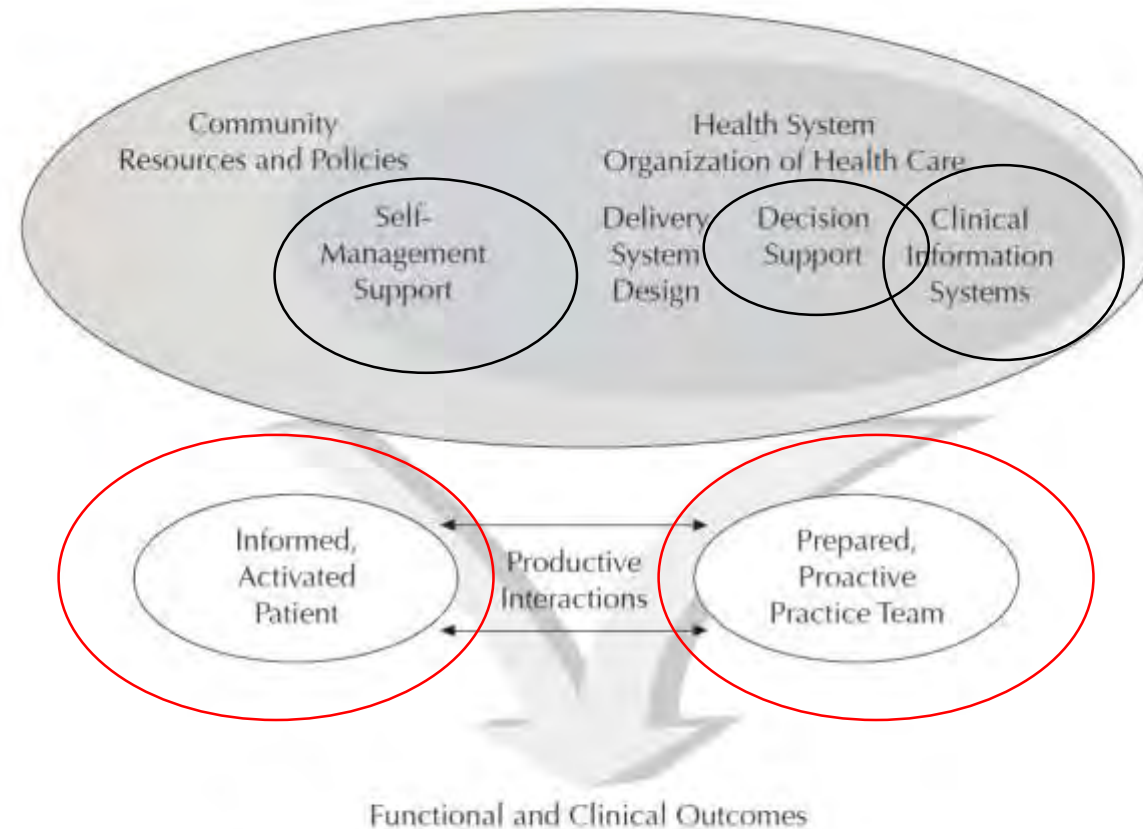


Figure 2. A model for effective chronic illness care.

CCM and ICT - A systematic review

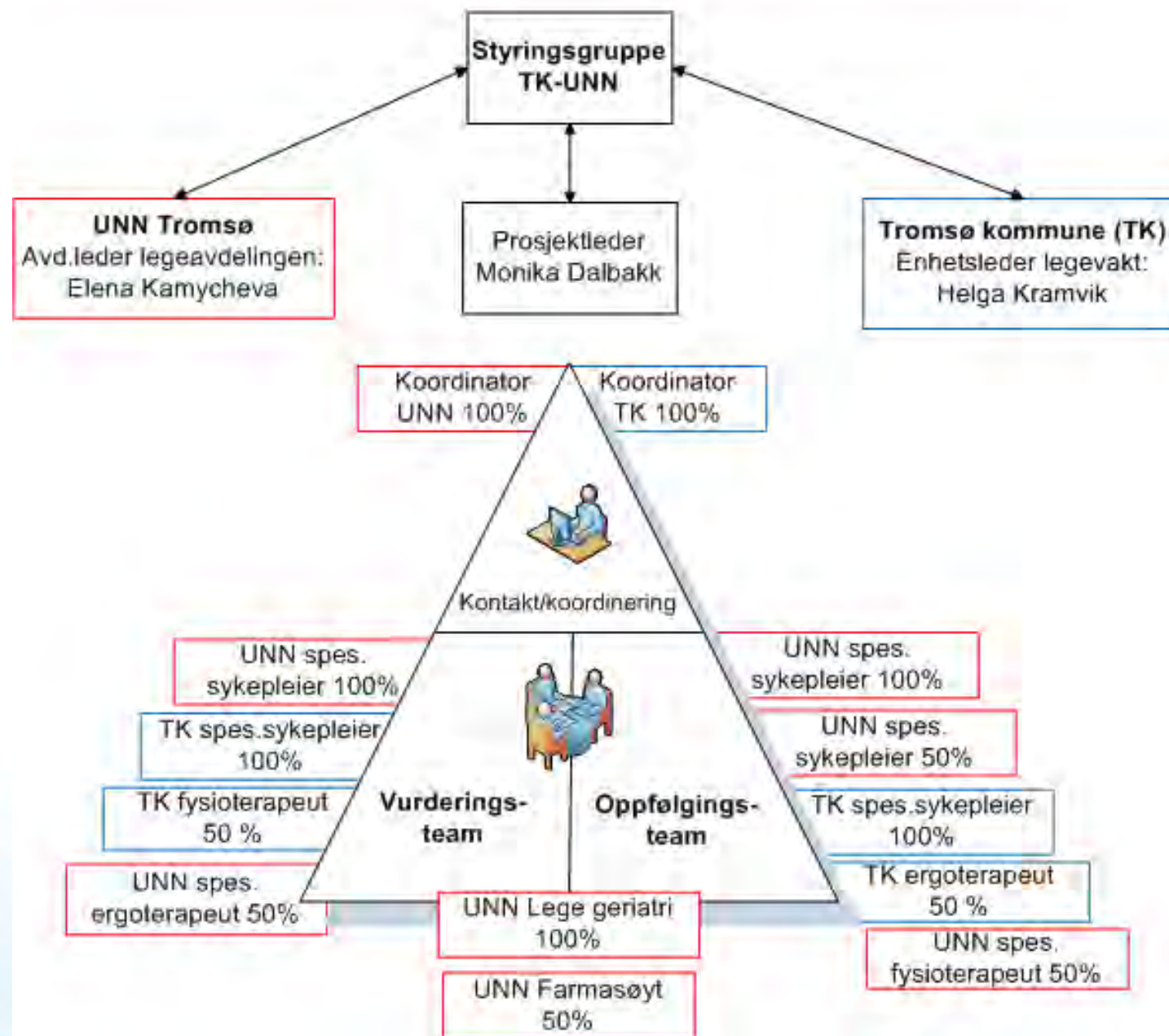
- Technologies supporting 'productive interactions' were often one-way (provider → patient),
- Difficult to decipher how CCM was guiding ICT-intervention design.
- Challenges in facilitating CCM components through ICT included;
 - poorly designed user interfaces
 - digital divide issues
 - lack of integration with existing infrastructure.

Gammon D; 2015. JMIR Vol 17 (2).

Patient centred health team Tromsø



PASIENTSENTRERTE HELSETJENESTETEAM



Early assessment treatment and discharge

- Ambulatory
- Multidisciplinary
 - Pharmasist
 - Geriatrican
 - Fysioterapist
 - General practitioner



- Early contact
- Treatment plan
- Follow-up plan
- Transfer plan
- Shared knowledge
- Early rehabilitation
- Medication adjustment
- Treatment at home 3-7 days
- Transfer to homecare and rehabilitation

What challenges do we see so far?

- Wrong medication and dosage
- Lack of communication
- Incomplete documentation
- No written plan
- Lack of patient follow-up
- Little comprehensive understanding

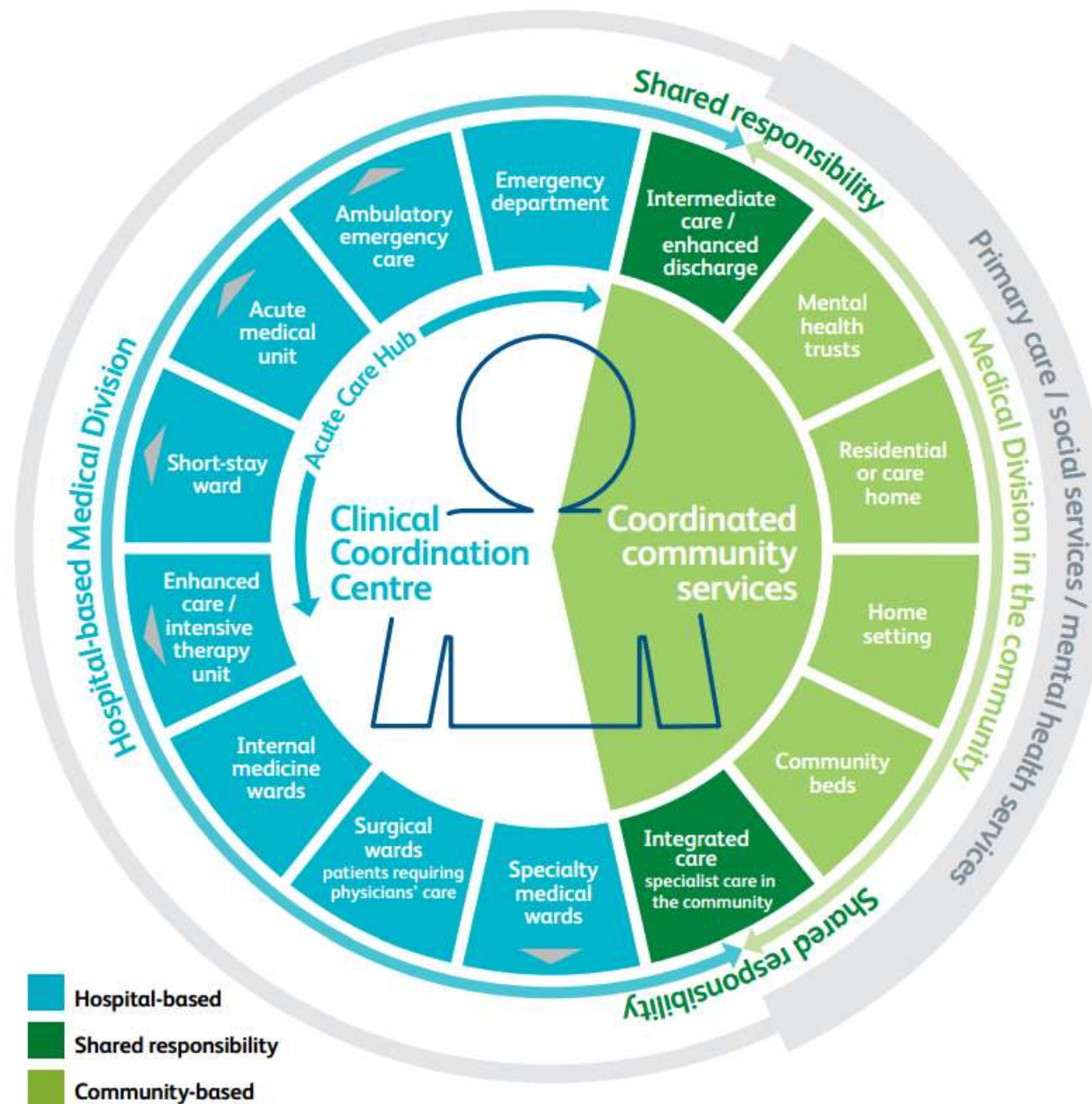


1.2. Synthesizing a Solution

Challenges

- There is no generic solution
- Many single diagnosis-specific offers
- Not integrated with EMR
- Existing solutions does not cover all information and communication needs
- No collaboration tool that provides common list of events in the patient's history (log)
- Legal and security challenges
- Fragmented solutions

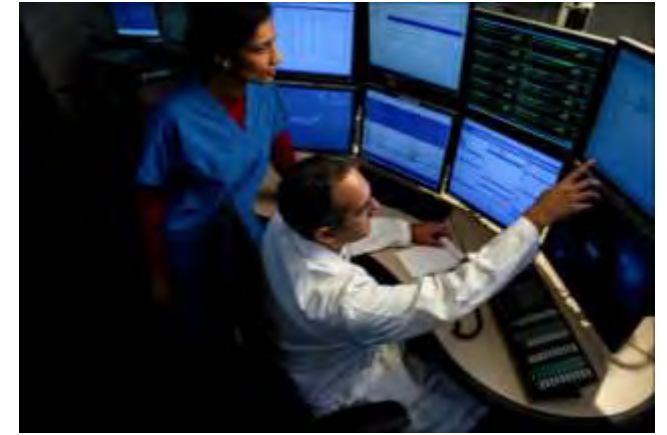




Mercy Virtual Care

- 11.000 m²
- 300 staff
- 24/7
- 75 telemed. services
- Opens 13/5-15





- SafeWatch ICU
- TeleStroke
- Pediatric Cardiology
- Teleradiology
- Nurse on call
- Home Monitoring
- Telesepsis

